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June 1, 1994

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JUN 1 1994

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

Dr. Joseph A. Levin
Chief, Policy and Planning Branch
Land Mobile and Microwave Division
Private Radio Bureau
Federal Communications Commission
Room 5202
2025 M Street, N.W.
Washington, D.C. 20554

Re: PR 92-235

Dear Dr. Levin:

This is submitted on behalf of Uniden America Corporation and it is in response to your recent inquiry about Uniden's plans to develop portable narrowband equipment for operation in the 220-222 MHz band, and in other bands.

In response to your inquiry, please be advised that Uniden has engaged the University of Bristol to develop the basic equipment design (the platform) for narrowband portable equipment, not only for the 220 but also in the VHF, and UHF bands. Decisions to move beyond design to production will depend on regulatory decisions by the Commission.

The attached "open letter" from the University of Bristol, which was prepared in response to your inquiry, dispels all doubts about the feasibility of producing narrowband commercial handheld products, not only for the 220 but for the higher bands as well.

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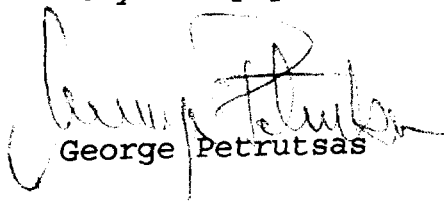
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Dr. Joseph A. Levin
June 1, 1994
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I hope this is useful to you. I have sent copies of this letter to the Secretary's Office for the docket files to comply with the ex parte rule requirements.

Very truly yours,


George Petrutsas

GP:cej

✓cc: Secretary, FCC
(For PR Docket 92-252) (two copies)



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UNIVERSITY OF BRISTOL **RECEIVED**

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JUN 1 1994

An open letter:

25/5/94

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

**Feasibility of Implementing narrowband linear 5kHz & 6.25kHz
channelled hand portable radios.**

Linear radio systems, such as those employed by Uniden, Stephens Engineering and Securicor-LMT for achieving 5kHz channel spacing at 220MHz, utilise very advanced signal processing technology, RF amplifier linearisation technology and low phase noise synthesiser technology. Much of this technology is state of the art, and was originally developed by the Centre for Communications Research laboratories at the University of Bristol, England. The University was also directly involved in the design and development of both the current Uniden and Securicor (E.F. Johnson) 220MHz radio products.

The Centre for Communications Research has been asked by Uniden to provide an independent opinion as to the feasibility of implementing the current 220MHz radio designs in a hand portable format. Recently, the Centre has conducted its own design study on this very topic in order to assess the technical feasibility of miniaturising the component technology and minimising power consumption necessary for portable implementation. Our conclusion is that there are no major problems associated with hand portable design in any of these areas and indeed conclude that the portable design will be significantly simpler than that involved with the design of hand portable equipment for the emerging TETRA standard for private mobile radio in Europe, which is being actively supported by several key manufacturers including Motorola, Ericsson, Nokia, Philips, Seimens, Bosch, etc. The University has been directly involved in the standards process and test bed design of the TETRA system and thus has first hand experience of this emerging technology. A more immediate example of a linear radio system capable of portable realisation is the Motorola MIRS system which employs almost identical linearisation and signal processing technology to the 220MHz equipment but operates in a 25kHz channel bandwidth and at four times the radio frequency. From a technical standpoint, the design challenges become less severe for narrower channel spacings and lower operating frequencies, further supporting the practicality of portable narrowband equipment.

It is thus our considered opinion that portable implementation of narrowband linear technology throughout the VHF and UHF frequency bands is highly feasible using current technology, with similar battery life, size and cost to present day FM equipment. It is worth noting in closing, that only three years ago many eminent equipment manufacturers claimed that 5kHz



channelled equipment in any form would never be a technical reality and have been proved wrong.



Dr Andrew Bateman (Deputy Director, Centre for Communications Research)